

AD-A137 325

193188 MLRS MISSILE NUMBER V53-03 ROUND NUMBER 521/CH-2 1/1

10 NOVEMBER 1983(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM. D C KELLER NOV 83

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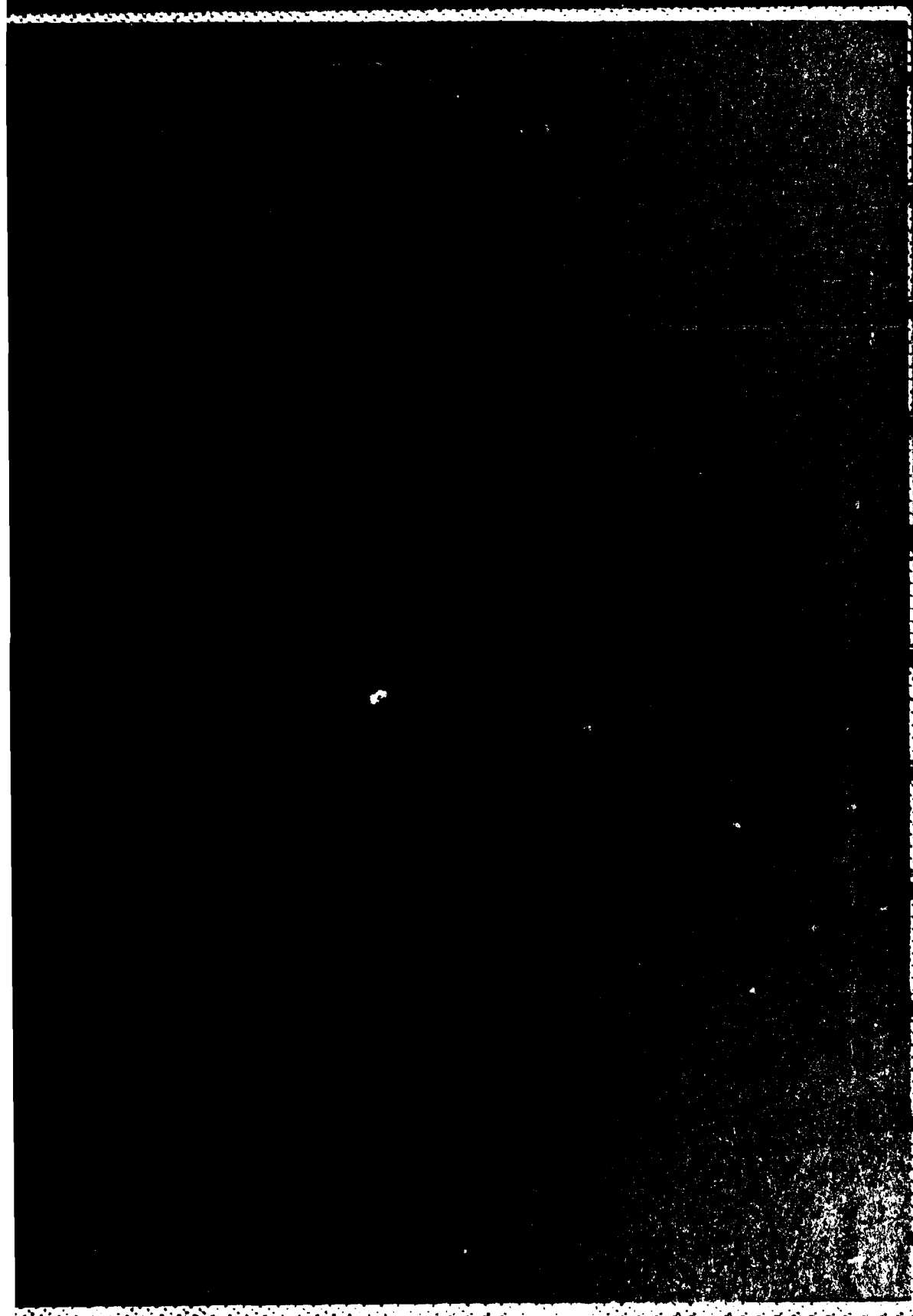
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FORMED

DATE



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19318B MLRS, Missile Number V53-03, Round Number 521/CH-2 are presented in tabular form.		

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INTRODUCTION

193188 MLRS, Missile Number V53-03, Round Number 521/CH-2, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0930 MST, 10 Nov 1983. The scheduled launch time was 0930 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE

LC-33 2km

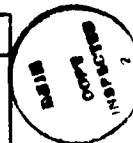
Don 2km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

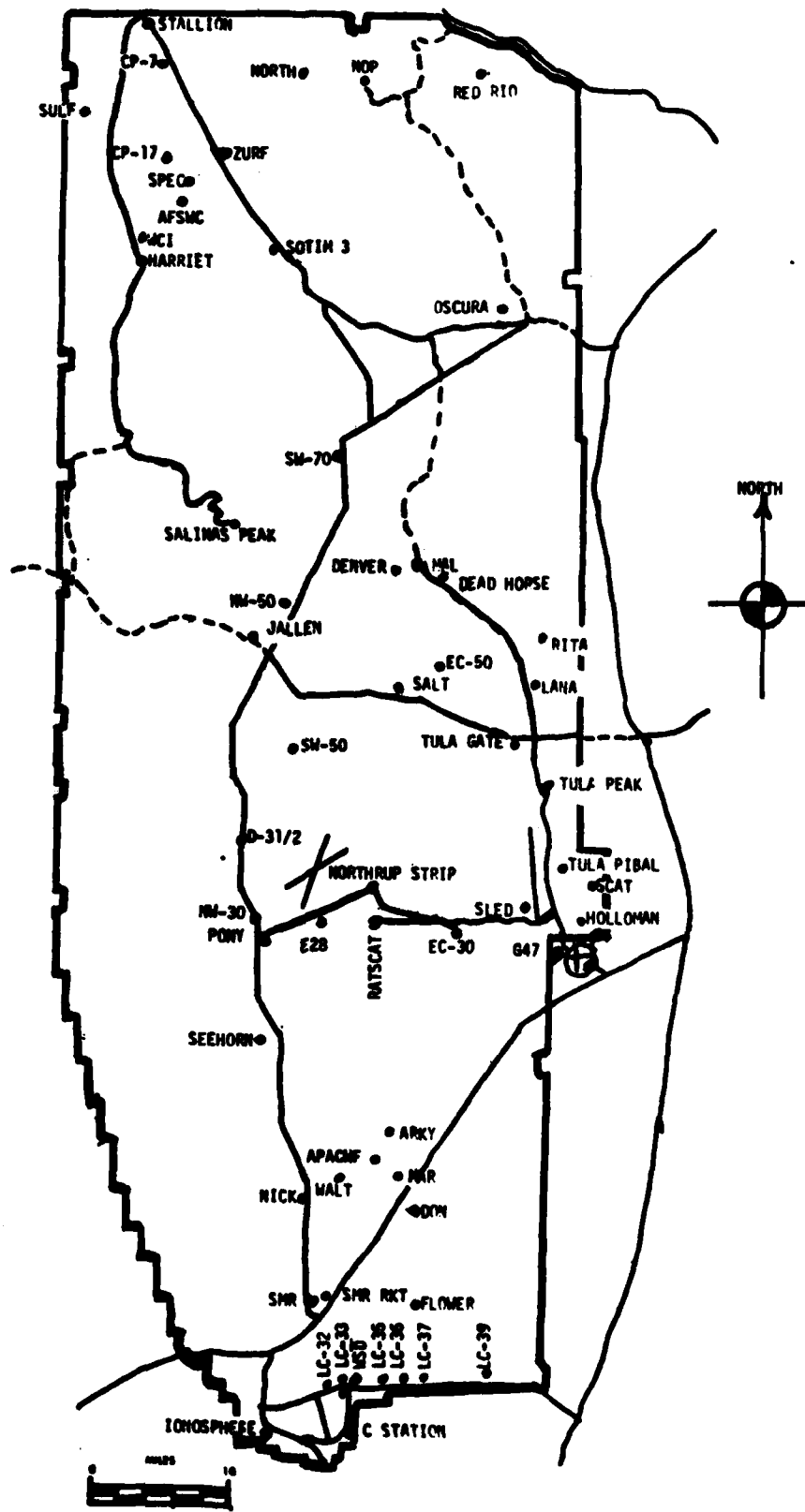
SITE AND TIME

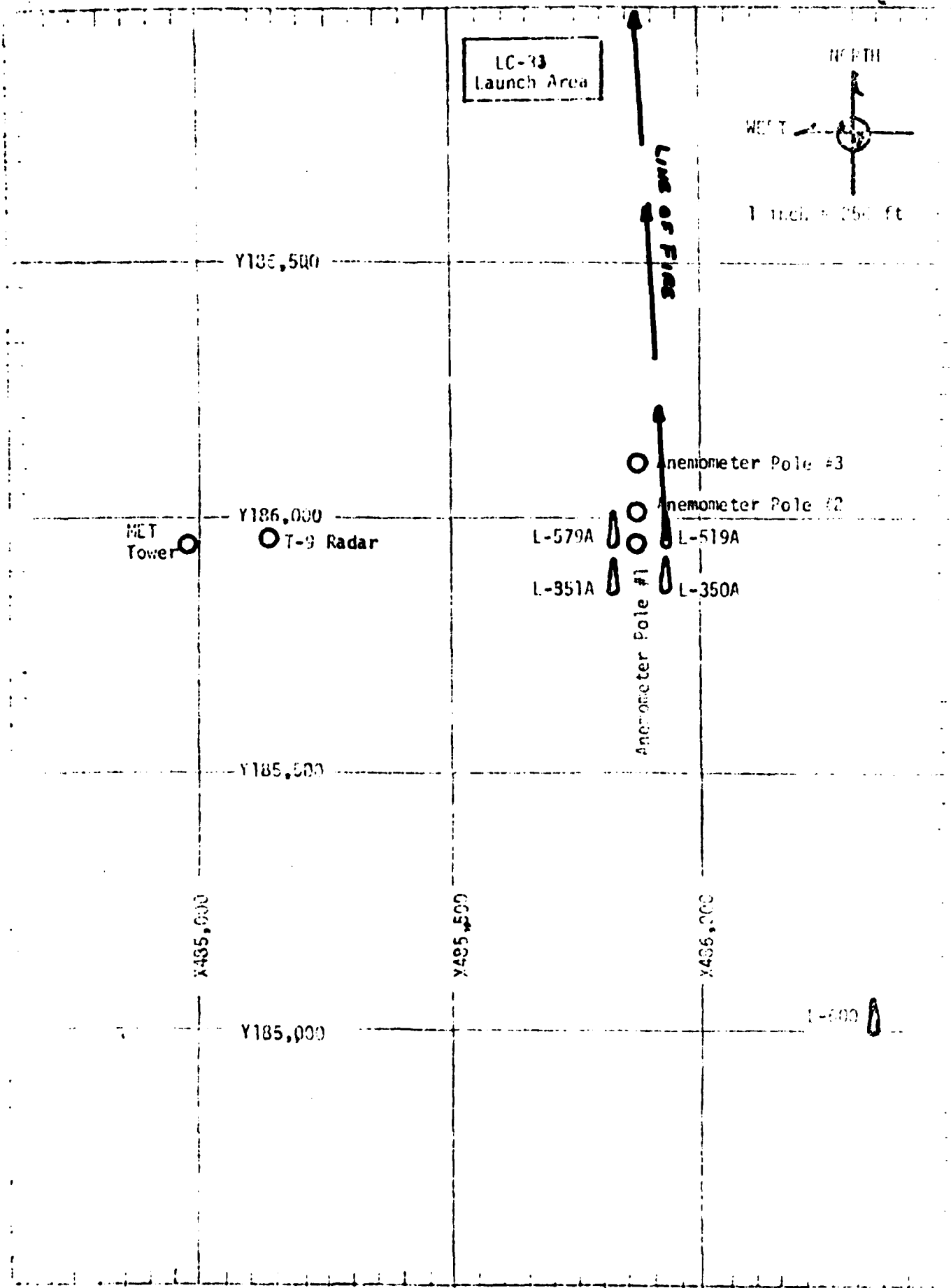
WSD 0700 MST
LC-37 0800 MST
WSD 0935 MST

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Avail and/or	
Dist	Special
A-1	



WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE <u>1</u>									
STATION: <u>LC-33</u>									
DATE <u>10</u> <u>Nov</u> <u>83</u> X = <u>484.982.73</u> Y = <u>185.957.73</u> H = <u>3995.00</u>									
TIME M S I	PRESSURE mb	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	DIRECTION degs Tn	MIND SPEED kts	CHARACTER kts	VISIBIL- ITY
0930	884.4	8.5	-1.2	51			CALM		60

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	HGT	AMT	TYPE	HGT	
	1	AC	16000	3	CI	25000	

PSYCHROMETRIC COMPUTATION

TIME:	0930	
DRY BULB TEMP.	8.5	
WET BULB TEMP.	4.0	
WET BULB DEPR.	4.5	
DEW POINT	-1.2	
RELATIVE HUMID.	51	

TABLE 2

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 10 November 1983

SITE: LC-33
 TIME: 0933 MST
 WSTM COORDINATES:
 X= 486,872.00
 Y= 184,146.75
 H= 3,981.15

SITE: Don
 TIME 0930 MST
 WSTM COORDINATES:
 X= 511,988.37
 Y= 247,396.36
 H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	024	05
210	028	02
270	201	05
330	206	06
390	201	07
500	227	03
650	267	05
800	290	11
950	287	14
1150	286	13
1350	309	12
1550	314	12
1750	310	14
2000	294	14

Data obtained from a Nike-Herc
 Radar Tracked pilot-balloon
 observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	013	02
210	001	02
270	321	01
330	284	02
390	276	02
500	274	03
650	299	03
800	295	06
950	289	10
1150	299	09
1350	303	11
1550	311	13
1750	309	14
2000	299	14

Data obtained from a single
 Theodolite Tracked pilot-balloon
 observation.

TABLE 3

AIMING AND T-TIME COMPUTER MET MESSAGES

10 November 1983

WSD 0700 MST

METCM1324064

101400122884

00000000 27360884

01044004 27780873

02349003 28090847

03480005 28080807

04561011 28100759

05552011 28070715

06505016 27820672

07515016 27540632

08521018 27220594

09515022 26860558

LC-37 0800 MST

METCM1324063

101500124883

00053022 27770883

01048004 27950872

02398004 28080846

03507008 28030806

04530013 28120758

05554013 28050714

06512014 27790671

07507015 27560631

08504020 27220593

09519025 26840557

WSD 0935 MST

METCM1324064

101660122884

00000000 28260884

01616001 28310874

02354003 28130848

03496008 28140808

04527012 28210760

05547013 28080716

06506013 27830673

07507016 27590633

08517021 27320595

09526022 26970559

STATION ALTITUDE 3989.00 FEET MSL
10 NOV. 83
ASCENDING NO. 551

SIGNIFICANT LEVEL DATA
3140020551
WHITE SANDS

GEOMETRIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 4

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
881.0 3089.0	-6	99.0
871.2 4163.2	3.4	64.0
857.6 4737.6	7.0	50.0
850.0 5041.1	7.2	55.0
841.0 5120.9	7.2	57.0
829.1 5714.1	-0.5	37.0
813.4 6230.9	7.7	27.0
781.4 7245.8	6.3	57.0
771.5 7553.0	5.1	47.0
760.3 7839.8	7.5	36.0
756.0 8206.2	8.2	16.0
741.0 8749.6	8.6	15.0
700.0 10288.7	6.6	15.0
618.5 13590.9	1.0	17.0
518.2 18280.1	-9.2	69.0
508.8 18647.2	-9.9	56.0
500.0 19089.1	-11.1	57.0
460.8 20651.4	-15.2	85.0
462.3 21050.9	-16.4	82.0
443.0 22104.3	-17.6	57.0
422.2 23283.2	-20.2	48.0
400.0 24592.1	-23.4	54.0
389.4 25290.3	-25.1	33.0
324.6 29500.9	-34.7	32.0
305.4 30890.3	-39.0	63.0
300.0 31298.9	-39.4	57.0
250.0 35316.6	-50.0	
200.0 39095.5	-61.7	
171.6 42861.1	-65.2	
161.0 44375.4	-64.8	
150.0 45795.1	-66.0	
131.2 48171.6	-66.0	
119.0 50414.9	-68.3	
100.0 53275.8	-66.2	
70.0 61049.9	-64.0	

STATION ALTITUDE 3989.00 FTFT ASL
10 NOV. 83
ASCENSION NO. 551

UPPER AIR DATA
310020551
WHITE SANDS

GEODLTIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 5

GEOMETRIC ALTITUDE ASL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPED. OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	884.0	-6	96.0	1127.2	643.9	.0	.0	1.000210
4000.0	883.6	-3	94.0	1125.7	644.2	232.9	.0	1.000279
4500.0	867.2	5.5	55.8	1081.8	651.0	232.9	.8	1.000266
5000.0	851.3	7.2	54.3	1055.3	653.1	232.9	1.7	1.000262
5500.0	835.7	7.2	48.1	1036.1	653.0	232.9	2.5	1.000254
6000.0	820.4	7.5	31.5	1016.9	653.1	249.3	3.4	1.000242
6500.0	805.3	7.3	35.0	998.6	653.0	276.7	5.6	1.000240
7000.0	790.6	6.6	49.7	982.0	652.4	292.2	7.6	1.000242
7500.0	776.0	5.3	48.7	968.8	650.8	303.6	9.6	1.000237
8000.0	761.8	7.8	27.3	943.2	653.5	312.7	10.2	1.000224
8500.0	747.9	8.4	15.5	924.5	654.0	320.1	10.8	1.000214
9000.0	734.2	8.3	15.0	908.0	653.8	318.5	10.8	1.000210
9500.0	720.7	7.6	15.0	893.5	653.1	313.7	11.0	1.000207
10000.0	707.5	7.0	15.0	879.2	652.3	303.8	12.0	1.000203
10500.0	694.5	6.2	15.1	865.2	651.4	293.8	13.8	1.000200
11000.0	681.8	5.4	15.4	851.8	650.4	285.7	16.0	1.000197
11500.0	668.9	4.5	15.7	838.5	649.4	284.4	15.7	1.000193
12000.0	656.5	3.7	16.0	825.5	648.4	284.3	15.6	1.000190
12500.0	644.3	2.9	16.3	812.7	647.4	286.9	15.8	1.000187
13000.0	632.4	2.0	16.6	800.1	646.4	288.9	16.5	1.000184
13500.0	620.6	1.2	16.9	787.6	645.4	290.4	17.7	1.000181
14000.0	608.8	.1	21.3	775.5	644.3	291.6	17.9	1.000179
14500.0	597.2	-1.0	26.5	763.7	643.0	292.5	17.9	1.000178
15000.0	585.8	-2.1	31.7	752.0	641.8	292.3	18.2	1.000176
15500.0	574.6	-3.2	36.9	740.5	640.5	292.3	19.1	1.000174
16000.0	563.6	-4.2	42.2	729.3	639.3	292.5	21.1	1.000172
16500.0	552.9	-5.3	47.4	718.2	638.0	292.0	24.3	1.000170
17000.0	542.5	-6.4	52.6	707.3	636.7	291.4	28.0	1.000168
17500.0	532.0	-7.5	57.8	696.6	635.4	291.3	30.3	1.000166
18000.0	521.8	-8.6	63.1	686.1	634.1	291.0	32.1	1.000164
18500.0	511.8	-9.6	60.0	675.6	632.8	290.4	32.3	1.000160
19000.0	501.9	-10.9	56.8	665.7	631.3	290.0	32.3	1.000157
19500.0	491.9	-12.2	64.4	655.8	629.7	290.1	32.1	1.000155
20000.0	482.2	-13.5	73.3	646.1	628.2	290.3	32.3	1.000153
20500.0	472.6	-14.8	82.3	636.5	626.6	290.6	32.4	1.000151
21000.0	463.2	-16.2	82.4	627.4	624.8	291.9	31.9	1.000148
21500.0	454.9	-16.9	71.3	616.6	623.9	293.0	31.2	1.000144
22000.0	444.9	-17.5	57.5	605.7	623.2	294.2	30.1	1.000140
22500.0	435.9	-18.5	54.0	595.9	621.9	295.0	30.4	1.000137
23000.0	427.1	-19.6	50.2	586.4	620.5	295.6	31.2	1.000134

STATION ALTITUDE 3489.00 FT. T. JBL.
10 NOV. 63 0700 HRS MST
ASCENDING NO. 551

UPPER AIR DATA
31400205.1
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 5 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEGREES, CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	913.4	-20.7	-28.0	49.0	577.2	619.1	296.6	31.9	1.000132
24000.0	409.9	-22.0	-29.3	51.3	568.2	617.6	296.6	32.3	1.000130
24500.0	401.5	-23.2	-29.7	53.6	559.3	616.1	294.3	32.0	1.000128
25000.0	393.0	-24.4	-33.6	41.9	550.5	614.6	291.4	32.1	1.000125
25500.0	385.1	-25.6	-37.0	33.0	541.7	613.1	288.1	32.5	1.000122
26000.0	377.0	-26.7	-38.1	32.8	532.7	611.7	285.6	33.0	1.000120
26500.0	369.0	-27.8	-39.2	32.7	523.9	610.2	283.2	33.3	1.000118
27000.0	361.2	-29.0	-40.2	32.6	515.3	608.8	281.4	32.2	1.000116
27500.0	353.6	-30.1	-41.3	32.5	506.8	607.4	280.0	31.3	1.000114
28000.0	346.1	-31.3	-42.3	32.4	498.4	605.9	281.0	31.6	1.000112
28500.0	338.8	-32.4	-43.4	32.2	490.2	604.5	281.5	31.8	1.000110
29000.0	331.7	-33.5	-44.4	32.1	482.2	603.1	280.9	31.8	1.000108
29500.0	324.7	-34.7	-45.5	32.0	474.3	601.6	280.5	31.3	1.000106
30000.0	317.7	-35.2	-46.2	43.0	467.0	599.7	280.3	30.4	1.000105
30500.0	310.8	-36.8	-47.3	54.2	459.9	597.7	281.3	30.4	1.000103
31000.0	304.0	-39.1	-48.7	61.5	452.4	596.0	282.8	30.9	1.000102
31500.0	297.3	-39.9	-49.0	54.1**	444.0	595.0	283.3	30.8	1.000100
32000.0	290.6	-41.2	-50.1	47.1**	436.5	593.5	283.6	30.6	1.000098
32500.0	284.1	-42.6	-50.7	40.0**	429.2	591.6	284.1	31.5	1.000096
33000.0	277.7	-43.9	-51.5	32.9**	422.0	589.9	284.6	32.6	1.000094
33500.0	271.5	-45.2	-52.7	25.8**	414.9	588.2	284.7	35.1	1.000093
34000.0	265.4	-46.5	-53.0	18.7**	407.9	586.5	284.7	37.5	1.000091
34500.0	259.4	-47.8	-54.2	11.6**	401.1	584.8	284.8	39.4	1.000089
35000.0	253.6	-49.2	-55.0	4.5**	394.5	583.1	284.3	40.9	1.000088
35500.0	247.8	-50.5	-56.7		387.7	581.4	283.0	41.4	1.000086
36000.0	242.0	-51.7	-57.0		380.7	579.7	281.9	41.9	1.000085
36500.0	236.3	-53.0	-58.0		373.8	578.1	281.2	42.5	1.000083
37000.0	230.7	-54.2	-59.2		367.1	576.4	281.3	43.4	1.000082
37500.0	225.3	-55.5	-60.5		360.5	574.8	282.3	44.3	1.000080
38000.0	220.0	-56.7	-61.7		354.0	573.1	283.6	45.1	1.000079
38500.0	214.8	-58.0	-62.9		347.7	571.5	285.1	45.7	1.000077
39000.0	209.7	-59.2	-64.1		341.5	569.8	286.7	46.0	1.000076
39500.0	204.8	-60.5	-65.5		335.4	568.2	288.3	46.1	1.000075
40000.0	200.0	-61.7	-66.7		329.4	566.5	289.3	46.5	1.000073
40500.0	195.1	-62.9	-67.9		322.3	565.7	289.9	47.1	1.000072
41000.0	190.3	-64.1	-69.1		315.4	564.9	289.4	46.2	1.000070
41500.0	185.7	-65.5	-70.5		308.6	564.0	288.2	44.6	1.000069
42000.0	181.1	-66.8	-71.8		301.9	563.2	286.6	42.9	1.000067
42500.0	176.7	-68.1	-73.1		295.4	562.4	285.3	41.2	1.000066
43000.0	172.4	-69.4	-74.4		288.8	561.6	284.8	41.0	1.000064

** AT LEAST ONE ASSIGNED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3489.00 FEET MSL
10 NOV. 83 0700 HRS MST
ASCENSION NO. 521

UPPER AIR DATA
3140020551
WHITE SANDS

GEODETIC COORDINATES
32-40043 LAT DEG
106-37033 LOH DEG

TABLE 5 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	160.2	-65.0		281.5	562.0	284.8	41.2	1.000003
44000.0	164.0	-64.9		274.4	562.2	286.0	40.4	1.000061
44500.0	160.0	-64.9		267.7	562.2	287.6	39.5	1.000060
45000.0	150.1	-65.3		261.6	561.6	288.4	40.1	1.000058
45500.0	152.2	-65.8		255.7	561.0	289.2	40.8	1.000057
46000.0	140.5	-66.0		249.7	560.7	294.4	41.4	1.000056
46500.0	144.8	-66.0		243.5	560.7	299.4	42.1	1.000054
47000.0	141.2	-66.0		237.5	560.7	303.2	38.8	1.000053
47500.0	137.7	-66.0		231.6	560.7	307.6	35.8	1.000052
48000.0	134.3	-66.0		225.9	560.7	304.4	29.8	1.000050
48500.0	131.0	-66.3		220.7	560.3	298.9	23.8	1.000049
49000.0	127.8	-66.8		215.8	559.6	290.2	21.6	1.000048
49500.0	124.6	-67.4		210.9	558.9	280.3	20.6	1.000047
50000.0	121.5	-67.9		206.2	558.2	276.6	23.0	1.000046
50500.0	118.5	-68.2		201.5	557.7	275.1	26.3	1.000045
51000.0	115.6	-67.9		196.2	558.1	276.3	28.2	1.000044
51500.0	112.7	-67.6		191.0	556.5	278.0	29.8	1.000043
52000.0	109.9	-67.3		186.0	558.9	279.3	30.6	1.000041
52500.0	107.2	-67.0		181.1	559.3	280.6	31.3	1.000040
53000.0	104.5	-66.7		176.4	559.7	282.5	31.7	1.000039
53500.0	101.9	-66.4		171.7	560.1	284.7	32.0	1.000038
54000.0	99.4	-66.2		167.3	560.5	286.8	31.5	1.000037
54500.0	96.9	-66.0		163.0	560.7	289.2	30.4	1.000036
55000.0	94.6	-65.9		158.9	560.9	290.7	29.1	1.000035
55500.0	92.2	-65.7		154.9	561.1	290.9	27.3	1.000034
56000.0	90.0	-65.5		151.0	561.3	291.6	25.7	1.000034
56500.0	87.8	-65.4		147.2	561.5	293.6	24.3	1.000033
57000.0	85.6	-65.2		143.5	561.7	295.3	22.6	1.000032
57500.0	83.5	-65.1		139.8	561.9	296.3	20.0	1.000031
58000.0	81.5	-64.9		136.3	562.1	296.7	17.3	1.000030
58500.0	79.5	-64.8		132.8	562.4	295.6	14.4	1.000030
59000.0	77.5	-64.6		129.5	562.6	294.9	12.4	1.000029
59500.0	75.6	-64.5		126.2	562.8	295.4	11.7	1.000028
60000.0	73.8	-64.3		123.0	563.0			1.000027
60500.0	71.9	-64.2		119.9	563.2			1.000027
61000.0	70.2	-64.0		116.9	563.4			1.000026

STATION ALTITUDE 3989.00 FEET MSL
 10 NOV. 83
 ASCENDING NO. 551

MANDATORY LEVELS
 3140020551
 WHITE SANDS
 TABLE 6

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMIDITY		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5037.	7.2	-1.2	55.	232.9	1.7	
800.0	6675.	7.1	-5.5	40.	281.6	6.5	
750.0	8415.	8.4	-16.3	16.	319.7	10.7	
700.0	10279.	6.6	-14.1	15.	298.2	12.9	
650.0	12260.	3.2	-20.0	16.	285.7	15.7	
600.0	14374.	-7	-14.1	25.	292.4	17.9	
550.0	16634.	-5.6	-14.0	49.	291.8	25.4	
500.0	19062.	-11.1	-17.9	57.	290.1	32.3	
450.0	21684.	-17.2	-21.9	60.	293.5	30.7	
400.0	24551.	-23.4	-30.1	54.	293.9	32.0	
350.0	27709.	-30.7	-41.8	32.	280.5	31.5	
300.0	31236.	-39.4	-44.6	57.	283.1	30.9	
250.0	35239.	-50.0			283.5	41.2	
200.0	39899.	-61.7			289.3	46.5	
175.0	42591.	-65.0			284.9	40.9	
150.0	45672.	-66.0			292.0	41.1	
125.0	49298.	-67.3			282.1	20.7	
100.0	53710.	-66.2			286.2	31.8	
80.0	58163.	-64.8			290.0	15.4	
70.0	60841.	-64.0					

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
10 NOV. 83
ASCENSION NO. 161

SIGNIFICANT LEVEL DAI.
1140180161
LC-37

GEODETIC COORDINATES
32-44175 LAT DEG
166-31232 LONG DEG

TABLE 7

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
882.6	3.7	-2.0	56.0
877.5	4.0	-4.0	56.0
876.4	5.6	-2.2	57.0
866.9	7.0	-5.0	42.0
858.0	6.8	-2.6	51.0
844.2	7.0	-2.2	52.0
834.0	7.5	-3.4	46.0
825.1	7.3	-13.0	22.0
814.9	7.5	-13.4	21.0
782.8	5.5	-1.9	59.0
776.1	5.3	-1.8	60.0
774.0	6.2	-3.7	42.0
763.6	8.3	-9.1	28.0
745.9	8.7	-15.7	19.0
700.0	6.5	-17.5	16.0
678.9	4.9	-18.6	16.0
623.9	1.9	-18.0	20.0
562.0	-4.5	-13.1	51.0
553.6	-5.7	-12.0	61.0
500.0	-10.9	-17.7	57.0
460.4	-15.5	-16.5	92.0
452.5	-17.2	-19.0	86.0
433.8	-17.9	-22.7	66.0
434.2	-18.5	-23.1	67.0
417.0	-20.3	-26.4	58.0
400.0	-23.4	-28.0	62.0
394.6	-24.1	-29.8	59.0
386.9	-25.4	-29.9	66.0
380.4	-26.3	-31.7	60.0
345.8	-31.5	-39.6	44.0
318.8	-35.7	-41.3	56.0
310.0	-37.6	-40.9	71.0
300.0	-39.0	-43.6	61.0
269.2	-45.1		
250.0	-48.5		
218.1	-56.2		
200.0	-60.8		
182.7	-63.3		
163.9	-64.0		
150.0	-65.0		

STATION ALTITUDE 4051.37 FEET MSL
 10 NOV. 83
 ASCENDING NO. 161

0800 HRS MST

SIGNIFICANT LEVEL DATA
 3140180161
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 7 Con't

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		WIND PERCENT
	AIR DEGREES	WETBULB CENTIGRADE	
130.1 48735.8	-66.5		
110.5 50590.3	-68.7		
100.0 53761.8	-66.5		
86.5 56874.7	-64.2		
70.0 61163.1	-63.0		
64.7 62762.7	-63.2		
61.0 63665.9	-61.0		
50.0 68055.5	-60.3		

STATION ALTITUDE 4051.37 FEET ASL
10 NOV. 83
ASCENSION NO. 161

UPPER AIR DATA
3140180161
LC-37

GEODETIC COORDINATES
32-40175 LAT (NEG)
106-31232 LONG (DEG)

TABLE 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	882.6	3.7	30.0	1.9	1.000273
4500.0	860.0	6.8	345.5	1.2	1.000261
5000.0	852.0	6.4	286.5	1.8	1.000260
5500.0	830.4	7.4	267.8	3.1	1.000254
6000.0	821.1	7.4	270.9	4.9	1.000238
6500.0	806.0	7.0	286.0	7.8	1.000238
7000.0	791.2	6.0	291.3	10.3	1.000242
7500.0	770.6	5.3	293.3	12.1	1.000242
8000.0	762.4	8.3	297.9	12.7	1.000224
8500.0	743.5	8.6	304.1	12.8	1.000215
9000.0	734.8	8.2	307.5	12.7	1.000211
9500.0	721.3	7.5	309.5	12.6	1.000207
10000.0	705.1	6.9	306.2	12.9	1.000204
10500.0	695.1	6.1	300.9	13.3	1.000200
11000.0	682.3	5.2	293.1	14.2	1.000197
11500.0	669.6	4.4	287.8	14.8	1.000194
12000.0	657.2	3.7	284.0	15.2	1.000191
12500.0	644.9	3.1	284.1	15.6	1.000188
13000.0	632.9	2.4	285.7	16.0	1.000185
13500.0	621.1	1.6	285.6	17.1	1.000183
14000.0	609.4	.5	285.3	18.2	1.000181
14500.0	597.9	-.7	283.9	19.4	1.000180
15000.0	586.6	-1.9	283.4	20.7	1.000178
15500.0	575.5	-3.0	284.0	22.2	1.000176
16000.0	564.6	-4.2	288.2	23.6	1.000174
16500.0	553.8	-5.7	293.2	25.0	1.000173
17000.0	543.1	-6.7	294.0	26.7	1.000170
17500.0	532.6	-7.7	294.0	28.3	1.000166
18000.0	522.3	-8.7	291.7	30.2	1.000163
18500.0	512.1	-9.7	290.5	31.8	1.000160
19000.0	502.2	-10.7	291.4	32.9	1.000157
19500.0	492.3	-12.0	291.7	33.4	1.000155
20000.0	482.6	-13.4	291.6	33.4	1.000153
20500.0	473.1	-14.8	290.7	32.9	1.000151
21000.0	463.7	-16.0	289.5	32.4	1.000149
21500.0	454.4	-17.0	288.3	31.4	1.000146
22000.0	445.3	-17.6	287.1	30.3	1.000142
22500.0	436.3	-18.7	286.3	29.7	1.000138
23000.0	427.5	-19.4	285.5	29.5	1.000135
23500.0	418.4	-20.1	284.5	30.4	1.000133

STATION ALTITUDE 4051.37 FEET MSL
 10 NOV. 83
 ASCENSION NO. 161

UPPER AIR DATA
 3140180161
 LC-37

GEODLTIC COORDINATES
 32.40175 LAT UEG
 106.31232 LONG UEG

TABLE 8 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KIOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KIOTS	INDEX OF REFRACTION
24000.0	410.5	-21.5	59.5	567.7	618.2	290.9	31.0	1.000130
24500.0	402.0	-23.0	61.5	559.5	618.3	291.0	31.5	1.000128
25000.0	393.7	-24.5	59.8	550.8	614.8	290.2	31.4	1.000126
25500.0	385.6	-25.6	64.8	542.3	613.1	289.3	31.2	1.000124
26000.0	377.5	-26.7	58.7	533.5	611.7	288.8	31.8	1.000121
26500.0	369.6	-27.9	55.2	524.7	610.2	288.4	32.4	1.000119
27000.0	361.8	-29.0	51.6	516.2	608.8	287.7	33.2	1.000117
27500.0	354.2	-30.2	48.0	507.8	607.3	286.7	33.7	1.000115
28000.0	346.8	-31.5	44.5	499.5	605.9	284.1	34.0	1.000113
28500.0	339.4	-32.5	46.8	491.1	604.5	282.0	34.2	1.000111
29000.0	332.1	-33.6	50.0	482.6	603.0	280.6	34.2	1.000109
29500.0	325.0	-34.7	53.2	474.7	601.6	279.3	34.2	1.000107
30000.0	318.0	-35.9	57.3	466.8	600.2	278.2	34.0	1.000105
30500.0	311.1	-37.4	69.0	459.6	598.3	277.5	33.3	1.000104
31000.0	304.5	-38.4	65.4	451.5	597.0	277.4	31.5	1.000102
31500.0	297.7	-39.4	56.6**	443.6	595.8	277.8	30.2	1.000100
32000.0	291.1	-40.7	44.0**	436.2	594.0	279.0	29.6	1.000098
32500.0	284.0	-42.0	31.3**	428.8	592.4	279.8	30.6	1.000096
33000.0	278.3	-43.2	18.7**	421.6	590.7	280.2	33.6	1.000094
33500.0	272.1	-44.5	6.1**	414.8	589.1	280.2	36.9	1.000092
34000.0	266.0	-45.6		407.3	587.6	280.1	40.6	1.000091
34500.0	260.0	-46.7		400.0	586.3	280.3	43.5	1.000089
35000.0	254.1	-47.7		392.7	584.9	280.7	45.6	1.000087
35500.0	248.3	-48.9		385.7	583.4	280.7	47.1	1.000086
36000.0	242.6	-50.2		379.0	581.7	280.5	48.0	1.000084
36500.0	236.9	-51.5		372.4	580.0	280.0	49.1	1.000083
37000.0	231.4	-52.9		366.0	578.2	279.4	50.2	1.000082
37500.0	226.1	-54.2		359.7	576.5	279.7	51.4	1.000080
38000.0	220.8	-55.5		353.4	574.7	280.9	52.6	1.000079
38500.0	215.6	-56.8		347.2	573.0	282.6	52.8	1.000077
39000.0	210.5	-58.1		341.0	571.3	284.9	52.2	1.000076
39500.0	205.5	-59.4		334.8	569.6	286.8	50.5	1.000075
40000.0	200.6	-60.6		328.8	567.9	287.8	47.7	1.000073
40500.0	195.7	-61.4		322.0	566.9	288.4	46.0	1.000072
41000.0	191.0	-62.1		315.2	566.0	288.6	45.2	1.000070
41500.0	186.3	-62.8		308.5	565.1	288.3	44.8	1.000069
42000.0	181.8	-63.5		301.9	564.3	287.8	44.7	1.000067
42500.0	177.4	-63.5		294.7	564.1	286.9	44.4	1.000066
43000.0	173.1	-63.6		287.6	563.9	285.8	44.0	1.000064
43500.0	168.8	-63.8		280.9	563.7	284.7	43.7	1.000063

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN LINE INTERPOLATION.

STATION ALTITUDE 4051.7 FEET MSL
10 NOV. 83
ASCENSION NO. 161

UPPER AIR DATA
3140180161
LC-37

GEOMETRIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 8 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	MEL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
44000.0	164.7	-64.0		274.3	563.5	284.7	43.4	1.000061
44500.0	160.7	-64.2		267.9	563.1	285.0	42.9	1.000060
45000.0	156.7	-64.5		261.7	562.7	286.4	41.1	1.000058
45500.0	152.9	-64.8		255.6	562.4	288.0	39.2	1.000057
46000.0	149.1	-65.1		249.7	562.0	292.9	34.0	1.000056
46500.0	145.5	-65.3		243.8	561.6	299.6	29.1	1.000054
47000.0	141.9	-65.6		238.1	561.3	301.8	24.7	1.000053
47500.0	138.4	-65.8		232.5	560.9	303.7	20.4	1.000052
48000.0	135.0	-66.1		227.1	560.6	291.9	19.1	1.000051
48500.0	131.6	-66.4		221.8	560.2	275.7	20.3	1.000049
49000.0	128.4	-66.8		216.7	559.6	268.9	23.6	1.000048
49500.0	125.2	-67.4		212.0	558.8	267.6	27.7	1.000047
50000.0	122.1	-68.0		207.3	558.0	270.5	30.2	1.000046
50500.0	119.0	-68.6		202.7	557.2	277.4	31.4	1.000045
51000.0	116.1	-68.4		197.5	557.4	282.3	32.4	1.000044
51500.0	113.2	-68.1		192.3	557.9	284.3	32.4	1.000043
52000.0	110.4	-67.8		187.2	558.3	285.9	32.4	1.000042
52500.0	107.6	-67.5		182.3	558.7	286.0	31.9	1.000041
53000.0	105.0	-67.1		177.5	559.2	286.1	31.5	1.000040
53500.0	102.4	-66.8		172.8	559.6	289.5	30.9	1.000038
54000.0	99.8	-66.5		168.2	560.1	293.0	30.4	1.000037
54500.0	97.4	-66.1		163.8	560.6	293.7	30.4	1.000036
55000.0	95.0	-65.7		159.5	561.1	293.8	30.5	1.000036
55500.0	92.6	-65.3		155.2	561.7	295.6	27.3	1.000035
56000.0	90.4	-64.9		151.1	562.2	299.6	22.1	1.000034
56500.0	88.1	-64.5		147.1	562.7	303.6	17.9	1.000033
57000.0	85.9	-64.2		143.3	563.2	305.1	14.8	1.000032
57500.0	83.9	-64.0		139.7	563.4	306.7	11.9	1.000031
58000.0	81.8	-63.9		136.2	563.6	300.7	12.0	1.000030
58500.0	79.8	-63.7		132.8	563.8	294.7	12.2	1.000030
59000.0	77.9	-63.6		129.5	563.9	289.2	11.6	1.000029
59500.0	76.0	-63.5		126.2	564.1	282.9	10.8	1.000028
60000.0	74.1	-63.3		123.1	564.3	273.7	10.8	1.000027
60500.0	72.3	-63.2		120.0	564.5	262.8	12.1	1.000027
61000.0	70.6	-63.0		117.0	564.7	255.0	13.6	1.000026
61500.0	69.8	-63.0		114.2	564.7	259.3	14.2	1.000025
62000.0	67.2	-63.1		111.4	564.6	263.2	15.0	1.000025
62500.0	65.5	-63.2		108.7	564.5	263.2	14.7	1.000024
63000.0	64.0	-62.6		105.8	565.3	261.9	14.1	1.000024
63500.0	62.4	-61.4		102.7	566.9	262.2	13.8	1.000023

STATION ALTITUDE 4051.37 FT MSL
 10 NOV. 63 0800 HRS MST
 ASCENSION NO. 161

UPPER AIR DATA
 3140180161
 LC-37

GEOMETRIC COORDINATES
 32.9175 LAT DEG
 106.31232 LONG DEG

TABLE 8 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	#IND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
64000.0	60.9	-60.9		100.0	567.5	255.3	14.0	1.000022
64500.0	59.4	-60.9		97.5	567.6	268.5	14.3	1.000022
65000.0	58.0	-60.8		95.2	567.7	283.2	12.4	1.000021
65500.0	56.6	-60.7		92.8	567.6	301.5	11.6	1.000021
66000.0	55.3	-60.6		90.0	567.9	314.7	10.0	1.000020
66500.0	53.9	-60.5		88.4	568.0	329.1	7.9	1.000020
67000.0	52.6	-60.5		86.2	568.1			1.000019
67500.0	51.4	-60.4		84.1	568.3			1.000019
68000.0	50.1	-60.3		82.1	568.4			1.000018

STATION ALTITUDE 4051.37 FEET MSL
10 NOV. 83
ASCENSION NO. 101

MAINTAINRY LEVELLS
3140180161
LC-37

GEOMETRIC COORDINATES
32-44.75 LAT DEG
105-31.322 LONG DEG

TABLE 9

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA		
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5061.	6.8	-2.6	51.	282.8	1.9	
800.0	6627.	6.6	-6.5	38.	289.2	9.1	
750.0	8437.	8.6	-13.8	19.	303.4	12.8	
700.0	10301.	6.5	-17.5	16.	304.2	13.1	
650.0	12281.	3.4	-18.6	18.	283.4	15.5	
600.0	14397.	-5	-15.3	32.	284.1	19.2	
550.0	16658.	-6.0	-12.4	61.	293.7	25.6	
500.0	19085.	-10.9	-17.7	57.	291.5	33.1	
450.0	21708.	-17.3	-19.6	82.	287.7	30.9	
400.0	24577.	-23.4	-28.6	62.	291.0	31.6	
350.0	27734.	-30.8	-38.6	46.	285.3	33.9	
300.0	31264.	-39.0	-43.6	61.	277.4	30.5	
250.0	35279.	-48.5			280.8	46.8	
200.0	39963.	-60.8			287.9	47.4	
175.0	42666.	-63.6			280.2	44.2	
150.0	45761.	-65.0			291.4	35.4	
125.0	49300.	-67.4			267.6	27.7	
100.0	53796.	-66.5			292.6	30.5	
80.0	58262.	-63.8			295.6	12.1	
70.0	60954.	-63.0			256.2	13.7	
60.0	64076.	-60.9			266.9	14.2	
50.0	67800.	-60.3					

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA
3140020552
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
10 NOV. 63
ASCENSION NO. 552

TABLE 10

PRESSURE GEODETIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		R. L. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
884.4	8.5	-1.0	51.0
877.8	10.3	-5.2	53.0
855.8	7.7	-6.0	37.0
850.0	7.5	-2.5	49.0
830.4	7.1	-2.1	52.0
826.6	7.9	-13.6	20.0
821.2	8.2	-10.6	25.0
801.3	7.6	-5.1	40.0
782.0	6.8	-1.3	56.0
774.8	6.7	-3.0	47.0
765.5	8.7	-14.3	18.0
756.6	10.1	-15.3	15.0
700.0	6.5	-19.0	14.0
614.8	1.5	-21.5	16.0
591.3	-0.6	-12.5	40.0
575.3	-1.7	-15.6	33.0
554.8	-6.8	-17.0	44.0
500.0	-12.3	-17.1	67.0
493.7	-11.7	-17.5	62.0
463.1	-15.8	-20.2	69.0
450.5	-16.0	-20.0	71.0
440.0	-15.9	-22.2	58.0
437.6	-17.4	-24.4	54.0
400.0	-23.4	-27.0	72.0
380.3	-26.3	-29.2	76.0
300.0	-39.5	-43.3	67.0
250.0	-49.1		
200.0	-60.0		
172.3	-53.5		
150.0	-64.4		
120.1	-65.8		
117.4	-68.5		
100.1	-66.0		
100.0	-66.3		
70.0	-62.4		
50.0	-61.1		
45.5	-58.0		
37.7	-56.2		
34.1	-57.1		
30.9	-54.2		

STATION ALTITUDE 3449.00 FEET MSL
 10 NOV. 63 0035 HRS MST
 ASCENSION NO. 552

SIGNIFICANT LEVEL DATA
 31400 20552
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 10 Con't

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR	DEWPOINT DEGREES CENTIGRADE	
30.0 7809.0	-55.0		
26.0 8742.3	-51.9		
15.1 9350.6	-49.7		

STATION ALTITUDE 3989.00 FEET MSL
10 NOV. 63
ASCENSION NO. 552

UPPER AIR DATA
3140020552
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 11

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARMS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES(TN))	SPEED KNOTS	INDEX OF REFRACTION
3989.0	884.4	8.5	51.0	1091.2	654.6	.0	.0	1.000270
4000.0	884.0	8.6	50.0	1090.5	654.7			1.000270
4500.0	867.9	9.1	34.8	1069.2	655.1			1.000257
5000.0	852.1	7.6	44.6	1055.3	653.4			1.000257
5500.0	830.5	7.3	44.8	1037.0	653.1			1.000253
6000.0	821.2	8.2	25.0	1015.5	653.9			1.000239
6500.0	800.2	7.7	36.3	998.0	653.5			1.000241
7000.0	791.4	7.2	48.2	981.1	653.1	285.3	11.1	1.000242
7500.0	770.9	6.7	49.6	964.7	652.5	288.0	12.7	1.000239
8000.0	762.7	9.1	17.1	940.3	654.9	297.5	11.9	1.000219
8500.0	740.8	9.6	14.9	921.6	655.4	305.9	11.7	1.000214
9000.0	735.1	8.8	14.6	907.6	654.4	312.2	12.0	1.000210
9500.0	721.6	7.9	14.4	893.7	653.4	307.9	12.5	1.000206
10000.0	700.5	7.1	14.2	880.1	652.4	302.7	12.9	1.000203
10500.0	695.4	6.2	14.1	866.5	651.4	295.3	12.7	1.000200
11000.0	682.5	5.5	14.4	852.6	650.6	288.9	13.0	1.000196
11500.0	669.9	4.8	14.7	839.0	649.7	283.5	13.6	1.000193
12000.0	657.4	4.1	15.0	825.5	648.9	283.2	14.4	1.000190
12500.0	645.2	3.4	15.3	812.4	648.0	283.4	15.3	1.000187
13000.0	633.3	2.6	15.5	799.4	647.2	284.2	16.3	1.000184
13500.0	621.5	1.9	15.8	786.6	646.3	286.7	17.4	1.000181
14000.0	609.9	1.1	20.9	774.2	645.4	289.4	18.8	1.000179
14500.0	590.5	.0	32.6	762.2	644.3	289.8	20.5	1.000180
15000.0	587.2	-9.9	38.2	750.3	643.3	290.6	21.7	1.000178
15500.0	576.1	-1.6	33.4	738.3	642.3	291.9	22.4	1.000174
16000.0	565.1	-2.9	35.7	727.7	640.6	295.1	22.1	1.000171
16500.0	554.3	-4.3	38.6	717.4	639.2	298.4	21.7	1.000169
17000.0	543.7	-5.6	41.5	707.3	637.6	299.3	21.9	1.000166
17500.0	533.3	-7.0	44.9	697.3	635.9	297.9	22.5	1.000164
18000.0	522.9	-8.6	51.7	687.9	634.0	294.7	23.6	1.000162
18500.0	512.8	-10.2	58.4	678.6	632.1	292.9	25.2	1.000160
19000.0	502.8	-11.8	65.1	669.5	630.1	291.3	26.7	1.000158
19500.0	492.9	-11.8	62.2	656.2	630.2	289.9	27.5	1.000155
20000.0	483.1	-13.1	64.4	640.5	628.6	287.2	28.1	1.000152
20500.0	473.6	-14.4	66.6	636.8	627.0	283.5	28.5	1.000149
21000.0	464.2	-15.6	68.7	627.4	625.5	281.1	28.6	1.000147
21500.0	455.0	-16.0	68.3	615.7	625.1	279.2	28.6	1.000144
22000.0	445.9	-16.3	56.9	604.3	624.0	280.5	28.4	1.000140
22500.0	436.9	-17.5	54.3	595.0	623.1	282.1	28.3	1.000137
23000.0	426.1	-18.9	58.4	580.0	621.4	284.5	28.3	1.000135

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
10 NOV. 83
ASCENSION NO. 352

UPPER AIR DATA
3140020552
WHITE SANDS

GEODOLIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 11 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	419.4	-20.2	62.5	577.3	619.0	286.1	28.5	1.000133
24000.0	410.9	-21.6	66.6	568.6	618.1	286.7	28.9	1.000131
24500.0	402.5	-23.0	70.7	560.2	616.4	286.6	28.6	1.000129
25000.0	394.2	-24.2	73.1	551.4	614.8	285.9	27.7	1.000127
25500.0	386.1	-25.4	74.8	542.7	613.3	285.1	27.5	1.000124
26000.0	378.0	-26.6	75.8	533.9	611.6	284.4	27.6	1.000122
26500.0	370.0	-27.8	75.0	525.1	610.3	283.3	29.3	1.000120
27000.0	362.1	-29.0	74.1	516.5	608.6	282.3	31.0	1.000118
27500.0	354.3	-30.2	73.3	508.0	607.3	282.0	30.6	1.000115
28000.0	346.8	-31.4	72.5	499.6	605.8	281.7	30.1	1.000113
28500.0	339.4	-32.6	71.7	491.4	604.3	281.8	28.9	1.000111
29000.0	332.1	-33.8	70.9	483.3	602.8	281.8	27.9	1.000109
29500.0	325.0	-35.0	70.0	475.4	601.2	281.3	27.4	1.000107
30000.0	318.1	-36.2	69.2	467.7	599.7	281.2	27.3	1.000105
30500.0	311.3	-37.4	68.4	460.0	598.2	281.5	28.0	1.000104
31000.0	304.7	-38.6	67.6	452.5	596.6	282.1	28.8	1.000102
31500.0	298.1	-39.8	64.6**	445.0	595.1	283.2	29.9	1.000100
32000.0	291.4	-41.0	56.3**	437.3	593.6	284.0	31.0	1.000098
32500.0	284.9	-42.2	48.0**	429.7	592.0	284.5	32.2	1.000096
33000.0	278.5	-43.4	39.7**	422.3	590.5	284.6	33.4	1.000094
33500.0	272.3	-44.6	31.3**	415.0	589.0	284.1	34.5	1.000093
34000.0	266.2	-45.8	23.0**	407.8	587.4	283.5	35.5	1.000091
34500.0	260.2	-47.0	14.7**	400.8	585.9	282.4	35.7	1.000089
35000.0	254.4	-48.2	6.4**	393.9	584.3	281.3	35.9	1.000088
35500.0	248.6	-49.4		387.0	582.8	278.8	36.9	1.000086
36000.0	242.8	-50.5		379.9	581.3	276.5	38.1	1.000085
36500.0	237.1	-51.7		373.0	579.8	274.7	41.7	1.000083
37000.0	231.5	-52.8		366.1	578.2	273.4	45.2	1.000082
37500.0	226.1	-54.0		359.5	576.7	273.8	47.1	1.000080
38000.0	220.8	-55.2		352.9	575.2	274.2	49.0	1.000079
38500.0	215.7	-56.3		346.5	573.7	273.9	50.4	1.000077
39000.0	210.6	-57.5		340.2	572.1	273.6	51.8	1.000076
39500.0	205.7	-58.6		334.0	570.6	274.5	50.7	1.000074
40000.0	200.9	-59.8		327.9	569.0	275.6	49.2	1.000073
40500.0	196.0	-60.5		321.1	568.1	277.3	47.5	1.000072
41000.0	191.3	-61.0		314.2	567.4	279.2	45.7	1.000070
41500.0	186.6	-61.6		307.4	566.6	280.1	44.6	1.000068
42000.0	182.1	-62.2		300.8	565.8	280.0	44.2	1.000067
42500.0	177.7	-62.8		294.3	565.1	280.0	43.5	1.000066
43000.0	173.4	-63.3		287.9	564.3	280.4	42.3	1.000064

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE, WAS USED IN THE INTERPOLATION.

STATION: ALTITUDE 3949.00 FEET MSL
 20 NOV. 85
 ASCENSION NO. 352

UPPER AIR DATA
 314020552
 WHITE SANDS

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37033 LO. DEG

TABLE 11 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES, CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	169.2	-63.6		281.3	563.9	280.7	41.3	1.000063
44000.0	163.1	-63.8		274.6	563.7	280.5	40.7	1.000061
44500.0	161.0	-63.9		268.1	563.5	280.0	40.3	1.000060
45000.0	157.1	-64.1		261.8	563.3	281.9	40.4	1.000058
45500.0	153.2	-64.3		255.6	563.1	283.1	40.6	1.000057
46000.0	149.5	-64.4		249.5	562.8	287.0	39.2	1.000056
46500.0	145.8	-64.7		243.6	562.5	291.0	37.8	1.000054
47000.0	142.2	-64.9		237.9	562.2	293.3	33.0	1.000053
47500.0	138.7	-65.1		232.3	561.9	292.8	25.8	1.000052
48000.0	135.3	-65.4		226.9	561.6	287.5	20.4	1.000051
48500.0	132.0	-65.6		221.0	561.3	272.5	18.9	1.000049
49000.0	128.8	-65.9		216.4	560.9	259.6	19.5	1.000048
49500.0	125.6	-66.6		211.8	559.9	263.9	23.8	1.000047
50000.0	122.4	-67.3		207.2	558.9	266.8	28.3	1.000046
50500.0	119.4	-68.0		202.8	558.0	272.0	31.5	1.000045
51000.0	116.4	-68.2		197.9	557.7	276.2	34.9	1.000044
51500.0	113.6	-67.4		192.2	558.9	279.7	36.3	1.000043
52000.0	110.7	-66.5		186.7	560.0	282.9	36.8	1.000042
52500.0	108.0	-66.0		181.6	560.7	286.9	36.7	1.000040
53000.0	105.3	-66.1		177.2	560.5	292.4	35.6	1.000039
53500.0	102.7	-66.2		172.9	560.4	297.5	34.6	1.000037
54000.0	100.2	-66.3		168.7	560.3	297.8	32.2	1.000036
54500.0	97.7	-66.0		164.4	560.6	298.1	29.8	1.000037
55000.0	95.3	-65.8		160.2	561.0	296.6	27.6	1.000036
55500.0	93.0	-65.5		156.1	561.4	294.2	25.5	1.000035
56000.0	90.7	-65.2		152.0	561.7	292.8	22.6	1.000034
56500.0	88.5	-65.0		148.1	562.1	293.2	18.6	1.000033
57000.0	86.4	-64.7		144.3	562.5	293.0	14.8	1.000032
57500.0	84.2	-64.4		140.6	562.8	286.8	12.7	1.000031
58000.0	82.2	-64.2		137.0	563.2	278.4	10.9	1.000031
58500.0	80.2	-63.9		133.5	563.6	277.1	11.4	1.000030
59000.0	78.2	-63.6		130.0	563.9	277.6	12.3	1.000029
59500.0	76.3	-63.3		126.7	564.3	275.7	12.4	1.000028
60000.0	74.4	-63.1		123.4	564.7	271.6	12.0	1.000027
60500.0	72.6	-62.8		120.2	565.0	268.5	12.4	1.000027
61000.0	70.8	-62.5		117.2	565.4	269.9	15.3	1.000026
61500.0	69.1	-62.4		114.2	565.6	270.6	18.2	1.000025
62000.0	67.4	-62.3		111.4	565.8	275.0	18.5	1.000025
62500.0	65.8	-62.2		108.7	565.9	279.3	18.8	1.000024
63000.0	64.2	-62.1		106.0	566.0	280.0	17.1	1.000024

STATION ALTITUDE 3949.00 FEET MSL
10 NOV. 83 0935 HRS MST
ASCENDING NO. 552

UPPER AIR DATA
3140020552
WHITE SANDS

GEOMETRIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 11 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	DIRECTION WIND DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	62.7	-62.0		103.4	560.1	278.4	14.3	1.000023
64000.0	61.2	-61.9		100.8	566.3	278.0	12.3	1.000022
64500.0	59.7	-61.8		98.4	566.4	280.7	11.7	1.000022
65000.0	58.2	-61.7		95.9	566.5	283.9	11.1	1.000021
65500.0	56.8	-61.6		93.6	566.8	291.3	11.1	1.000021
66000.0	55.5	-61.5		91.3	566.8	298.5	11.3	1.000020
66500.0	54.1	-61.4		89.0	566.9	301.9	9.7	1.000020
67000.0	52.8	-61.3		86.9	567.0	305.4	7.7	1.000019
67500.0	51.5	-61.2		84.7	567.1	306.7	6.9	1.000019
68000.0	50.3	-61.1		82.6	567.3	304.4	7.0	1.000018
68500.0	49.1	-60.5		80.4	568.1	303.0	7.1	1.000018
69000.0	47.9	-59.7		78.2	569.2	304.1	6.6	1.000017
69500.0	46.8	-58.9		76.1	570.2	305.5	6.1	1.000017
70000.0	45.7	-58.1		74.0	571.3	301.7	4.5	1.000016
70500.0	44.6	-57.8		72.1	571.7	292.4	2.8	1.000016
71000.0	43.5	-57.6		70.3	572.0	261.6	2.3	1.000016
71500.0	42.5	-57.3		68.6	572.3	234.8	3.2	1.000015
72000.0	41.5	-57.1		66.9	572.6	222.8	4.3	1.000015
72500.0	40.5	-56.9		65.3	572.9	220.1	4.4	1.000015
73000.0	39.6	-56.7		63.6	573.2	217.6	4.6	1.000014
73500.0	38.6	-56.4		62.1	573.5	208.6	3.9	1.000014
74000.0	37.7	-56.2		60.5	573.8	193.1	3.2	1.000013
74500.0	36.8	-56.4		59.2	573.5	185.1	3.4	1.000013
75000.0	35.9	-56.6		57.8	573.3	189.5	4.6	1.000013
75500.0	35.1	-56.8		56.5	573.0	196.0	5.7	1.000013
76000.0	34.3	-57.1		55.3	572.7	230.6	7.7	1.000012
76500.0	33.5	-56.6		53.8	573.4	247.4	11.2	1.000012
77000.0	32.7	-55.9		52.4	574.3	259.0	13.3	1.000012
77500.0	31.9	-55.2		51.0	575.2	269.7	14.8	1.000011
78000.0	31.2	-54.5		49.7	576.1	278.1	16.6	1.000011
78500.0	30.4	-54.6		48.5	575.9	281.2	15.4	1.000011
79000.0	29.7	-54.9		47.5	575.5	284.8	14.4	1.000011
79500.0	29.0	-54.8		46.3	575.7	291.6	13.6	1.000010
80000.0	28.4	-54.6		45.2	576.0	302.3	13.5	1.000010
80500.0	27.7	-54.4		44.1	576.2	312.7	13.9	1.000010
81000.0	27.1	-54.2		43.1	576.4	319.0	14.1	1.000010
81500.0	26.4	-54.0		42.0	576.7	324.4	14.2	1.000009
82000.0	25.8	-53.9		41.0	576.9	329.2	14.0	1.000009
82500.0	25.2	-53.7		40.0	577.1	332.5	11.8	1.000009
83000.0	24.6	-53.5		39.1	577.4	337.4	9.7	1.000009

STATION ALTITUDE 5989.00 FT. T MSL
 10 NOV. 63 0935 HRS MSL
 ASCENSION NO. 552

UPPER AIR DATA
 3140020552
 WHITE SAWS

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 11 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
83500.0	24.1	-53.3		38.1	577.6	339.6	8.5	1.000008
84000.0	23.5	-53.1		37.2	577.4	338.7	7.9	1.000008
84500.0	23.0	-53.0		36.3	578.1	337.7	7.3	1.000008
85000.0	22.4	-52.8		35.5	578.3	314.3	6.6	1.000008
85500.0	21.9	-52.6		34.6	578.6	289.9	7.1	1.000008
86000.0	21.4	-52.4		33.8	578.8	272.7	8.8	1.000008
86500.0	20.9	-52.2		33.0	579.0	267.2	11.2	1.000007
87000.0	20.4	-52.1		32.2	579.3	263.7	13.7	1.000007
87500.0	19.9	-51.9		31.4	579.5	262.2	15.9	1.000007
88000.0	19.5	-51.7		30.7	579.7	260.1	16.1	1.000007
88500.0	19.0	-51.5		29.9	580.0	270.0	16.4	1.000007
89000.0	18.6	-51.3		29.2	580.2	273.6	16.4	1.000006
89500.0	18.2	-51.2		28.5	580.5	277.8	13.2	1.000006
90000.0	17.8	-51.0		27.9	580.7	284.4	10.1	1.000006
90500.0	17.4	-50.8		27.2	580.9	295.4	7.4	1.000006
91000.0	17.0	-50.6		26.5	581.2	296.9	6.6	1.000006
91500.0	16.6	-50.4		25.9	581.4		5.8	1.000006
92000.0	16.2	-50.2		25.3	581.6			1.000005
92500.0	15.8	-50.1		24.7	581.9			1.000005
93000.0	15.5	-49.9		24.1	582.1			1.000005
93500.0	15.1	-49.7		23.5	582.4			1.000005

STATION ALTITUDE 3989.00 FEET MSL
10 NOV. 83
ASCENSION NO. 352

MANDATORY LEVELS
3140020552
WHITE SANDS
TABLE 12

GEOMETRIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

PRESSURE GEOPOTENTIAL MILLIBARS	FLEET	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUMIDITY PERCENT	WIND DATA		
				DIRECTION DEGREES (TN)	SPEED KNOTS	
850.0	5063.	7.5	49.	9999.0	9999.0XX	
800.0	6702.	-4.8	41.	283.7	10.0	
750.0	8449.	-15.7	15.	305.2	11.7	
700.0	10315.	-14.0	14.	298.0	12.7	
650.0	12298.	-20.4	15.	283.2	15.0	
600.0	14416.	-14.9	31.	289.7	20.2	
550.0	16686.	-16.4	40.	298.8	21.8	
500.0	19113.	-17.1	67.	290.9	25.9	
450.0	21738.	-15.9	60.	279.9	28.5	
400.0	24611.	-23.4	72.	286.4	28.4	
350.0	27769.	-30.9	73.	281.7	30.4	
300.0	31295.	-39.5	67.	282.8	29.6	
250.0	35305.	-49.1		279.5	36.6	
200.0	39993.	-60.0		275.8	49.0	
175.0	42708.	-63.1		280.2	42.8	
150.0	45808.	-64.4		266.2	39.5	
125.0	49449.	-66.7		264.3	24.4	
100.0	53872.	-66.3		297.8	32.1	
80.0	58334.	-63.9		277.1	11.3	
70.0	61029.	-62.4		270.3	10.5	
60.0	64155.	-61.9		279.8	11.8	
50.0	67864.	-61.1		304.1	7.1	
40.0	72471.	-56.8		219.0	4.5	
30.0	78473.	-55.0		283.1	14.9	
25.0	82307.	-53.6		333.7	11.2	
20.0	87034.	-51.9		261.7	15.7	

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

END

FILMED

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